

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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JAN 26 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

The Development of Operational, Technical, and)
Spectrum Requirements for Meeting Federal, State)
and Local Public Safety Agency Communications)
Requirements Through the Year 2010)

WT Docket No. 96-86

To: The Commission

**REPLY COMMENTS OF
THE ASSOCIATION OF PUBLIC-SAFETY
COMMUNICATIONS OFFICIALS-INTERNATIONAL, INC.
(APCO)**

January 26, 1998

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TABLE OF CONTENTS

	<u>PAGE</u>
I. Planning Issues.....	2
II. Frequency Coordination.....	7
III. Interoperability and Technical Standards.....	8
IV. Eligibility.....	11
V. Broadcast/Public Safety Interference Protection.....	15
VI. Global Navigation Satellite System (GLONASS) Interference.....	15
Conclusion.....	16

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REPLY COMMENTS OF APCO

The Association of Public-Safety Communications Officials-International, Inc.

("APCO") hereby submits the following Reply to comments filed in response to the Commission's Second Notice of Proposed Rulemaking in the above-captioned proceeding, FCC 97-373, released October 24, 1997.

There was general consensus on most of the basic issues raised in the Second Notice, especially among the public safety community as reflected in the comments of the National Public Safety Telecommunications Council ("NPSTC"), of which APCO is a member. Most parties agreed that much of the planning for the 746-806 MHz band needs to be conducted below the national level, that the Commission should not dedicate "a significant portion" of the 24 MHz for interoperability alone, and that additional interoperability spectrum must be allocated closer to existing 150-170 MHz and 450-512 MHz public safety allocations. However, several matters raised in some of the comments do require a reply.

I. Planning Issues

While most parties supported regional planning similar to the current 821 MHz regional planning, a few suggested that planning below the national level be conducted on a state-by-state basis. Most of the current planning regions do not cross state boundaries. The only exceptions are in New England and in the New York, Philadelphia, and Chicago metropolitan areas.¹ Those regions cross state boundaries to reflect actual population centers and the realities of spectrum propagation which ignore political boundaries.² If all regions were organized strictly along state lines, every frequency decision in the New York, Boston, Philadelphia, and Chicago metropolitan areas would need to comply with at least three separate regional plans. Two states, California and Texas, have been divided into separate regions (without crossing state borders) to accommodate their large size, diverse geography, and varying population densities, and also to minimize travel obligations for planning committee participants. The alternative proposal of the American Association of State Highway and Transportation Officials, et al., (“AASHTO, et al.”) for state plans with regional subcommittees would simply add another layer of bureaucracy and consume scarce time and resources.³

¹ The exceptions are Region 19, which covers the Boston area and the surrounding states of Maine, New Hampshire, Vermont, Rhode Island, and portions of Connecticut; Region 8 covering New York City and surrounding portions of New York, Connecticut and New Jersey; Region 28 covering Philadelphia along with Eastern Pennsylvania, Southern New Jersey, and Delaware; and Region 54, which covers Chicago and surrounding portions of Illinois, Wisconsin, Indiana, and Michigan. In addition, California is divided into two regions, and Texas is divided into six regions.

² The New England region, consisting of all or part of five small states, was created in the view at the time that there would be limited use of the 821 MHz band in much of the sparsely populated, mountainous, and heavily forested areas of the region.

³ Joint Comments of AASHTO, et al., at 14.

While some minor modifications to the regional boundaries may be appropriate, a substantial reorganization would add delay to the planning and licensing process.

Therefore, APCO suggests that the planning process begin with the current 55 regional planning committees organized along current regional boundaries, subject to a request for boundary changes by a consensus of the relevant public safety agencies within a particular region.

While most regional boundaries are now concurrent with state boundaries, the process is not and should not be controlled by state governments, most of which lack the necessary capability and expertise. Furthermore, interoperability and rational spectrum planning must recognize the roles of all forms of government: state, county, and municipal. Prior attempts by states to manage all public safety spectrum within their boundaries have often led to political battles that consumed scarce time and resources. State spectrum management should remain an option as it can be successful in the right circumstances. It should not, however, be mandated by the FCC, an action that is likely to be interpreted as an “unfunded federal mandate.”

AASHTO, et al. suggest that the national planning for the 746-806 spectrum be done by the National Public Safety Telecommunications Council (“NPSTC”).⁴ NPSTC itself did not make such a recommendation, as the proposal did not have the support of a consensus of NPSTC members. While APCO has been a key player in NPSTC, and has devoted considerable time and resources to its development and activities, APCO does not believe that NPSTC is the appropriate body for national spectrum planning as

⁴ Joint Comments of AASHTO, et al., at 7.

contemplated in this proceeding. First, most NPSTC members have little or no experience in regional planning. Second, NPSTC does not have any formal standing and, at least at present, is not the “strong” national body that AASHTO, et al., APCO, and others believe is necessary. Finally, experience has demonstrated NPSTC’s consensus voting requirement and organizational representation is likely to prevent it from making tough decisions on specific planning issues. There are important roles for NPSTC, such as providing consensus comments in proceedings such as this. National frequency planning, however, belongs elsewhere.

APCO suggests that the national planning committee be a “federal advisory committee” or other similar body with official recognition so that its decisions will have strength and the imprimatur of the FCC. The committee should consist of individuals (not organizations as is the case with NPSTC) with technical expertise and proven leadership in the regional planning process. Members should come from all aspects of public safety communications in terms of population served (urban/rural, state/local) and type of service provided (multi-agency, police, fire, EMS, etc.). Federal participation would also be appropriate for planning of interoperability spectrum.

The Federal Law Enforcement Wireless Users Group (“FLEWUG”) suggests that in addition to regional committees and a national committee, that there be six to eight “super-regions.”⁵ APCO objects to that proposal as it would do little more than add another layer of bureaucracy and burdens on already overextended public safety agency personnel. APCO also opposes FLEWUG’s suggestion that all interoperability spectrum

⁵ Comments of FLEWUG at 19.

planning be on a national level.⁶ Interoperability between federal and non-federal users is certainly important, and has gained attention in certain high-profile situations such as the Oklahoma City bombing. However, the overwhelming number of interoperability situations do not involve federal users. Rather, interoperability is much more often an issue for overlapping or abutting state, county, and/or municipal jurisdictions. Therefore, while there needs to be federal input into interoperability planning (perhaps in the form of national planning guidelines), the actual planning for interoperability spectrum needs to be on a regional basis.

APCO disagrees with the suggestion of the Commonwealth of Pennsylvania that specific frequency “assignments” should be made by coordinators rather than planning committees.⁷ While coordinators and planning committees need to work closely together, regional committees are in a better position to make frequency assignment recommendations, albeit with the assistance and guidance of the frequency coordinator. For a variety of reasons that need not be addressed here, Pennsylvania experienced some unique problems in the regional planning process which are not representative of other public safety agencies nationwide. The vast majority of regional plans have gone smoothly, without complaint regarding the committees or the coordination process.

AASHTO, et al., also allege that the regional planning process has not worked well and cite four specific instances involving New Hampshire and Nevada.⁸ First, a full discussion of the facts in those instances, while unnecessary in this context, would tell a

⁶ Id. at 12.

⁷ Comments of the Commonwealth of Pennsylvania at 9.

⁸ Joint Comments of AASHTO, et al., at 7-8.

very different story. Second, even assuming the validity of those four isolated examples, they pale in comparison to the 10,693 base station (FB2) transmitters in the 821 MHz band that have been successfully assigned through the regional planning/APCO coordination process just since March 1992.⁹

The overwhelming number of regional planning decisions have been handled in an open and fair manner with every reasonable attempt to accommodate the needs of as many public safety agencies as possible. APCO agrees that the regional committees need to operate in a disciplined, organized fashion with appropriate checks and balances. The existence of a recognized and fully qualified national planning committee, with specific planning guidelines, should address most of those issues. However, the fact that there may have been isolated problems involving a very small number of applications within the regional planning process is no reason to eliminate the regional planning process altogether.

APCO agrees with AASHTO, et al. that one of the tasks of the national planning committee should be to ensure that applicants seeking to replace existing systems with 746-806 MHz systems are required to “give-back” their existing frequency assignments for use by other public safety agencies, absent a compelling need by the applicant to retain some or all of their prior frequencies. Most of the potential “give-back” channels are in the 150-170 MHz and 450-470 MHz bands where there is considerable pent-up demand for frequencies by public safety agencies. Several regional plans already have strict guidelines for both channel “give-backs” and reassignment priorities, and should serve as

⁹ Source: APCO database of 821 MHz applications for FB2 transmitters since 1982.

models for the 746-806 MHz band.

II. Frequency Coordination

AASHTO, et al., urge that all four current public safety frequency coordinators be permitted to coordinate the 746-806 MHz band.¹⁰ APCO opposes such a departure from the current coordination process in use for the 800 MHz public safety frequencies. As explained in APCO's initial comments, the other coordinators lack APCO's experience in coordinating multi-agency 800 MHz systems through a regional planning process. Nor do they have the depth (e.g., local advisors in each region) or resources to participate in and support regional planning activities. Moreover, unlike APCO's proposal, the AAHSTO, et al. approach does not offer a mechanism for coordinators to provide technical and financial support to the regional planning process. Several public safety agencies urged the Commission to identify just such a mechanism.¹¹

Competitive coordination would actually create an economic disincentive for coordinators to spend resources on regional planning as that would drive up their costs and coordination fees. APCO also questions if there would be any more than a theoretical benefit to "competition" among coordinators. For example, there would be less "competition" than meets the eye as all three of the other coordinators depend upon the

¹⁰ Joint Comments of AASHTO, et al., at 15.

¹¹ Several parties noted the critical need to identify funding sources for regional planning, in some cases suggesting a mechanism similar to that proposed by APCO. See Comments of State of California at ¶33; Comments of New York State Police at 9; Comments of City of Richardson, Texas at 3; Comments of the City of Long Beach, California at 5; Comments of Brazos County Emergency Communications District at 3.

services of a single commercial contractor, Communications Engineering Technology, Inc. ("CET"), for their coordination activities.

AASHTO, et al., further recommend that CET maintain the master database for all public safety users of the 746-806 MHz band.¹² APCO strongly objects to placing such reliance on a single commercial entity. APCO was also once a customer of CET's, but terminated that relationship in favor of creating and maintaining its own database and coordination programs to reduce costs and improve the quality of service provided to applicants. Under no circumstances should APCO or, more importantly, public safety agencies be forced to utilize once again a commercial monopoly for such a critical element of the coordination process.¹³ There should be a single regional planning database, but it must be freely available through the Internet and maintained by a non-profit public safety organization such as APCO.

III. Interoperability and Technical Standards

Motorola discourages the Commission from adopting digital interoperability standards.¹⁴ APCO disagrees as it believes that the Commission should adopt at least a baseline common air interface for digital interoperability, and joins with NPSTC, State of California, New York State Police, the State of Florida and others in suggesting that

¹² Id. at 19.

¹³ APCO recognizes the other public safety coordinators may have a legitimate need to rely on a third party provider due to their size and resources.

¹⁴ Comments of Motorola at 13.

Project 25 Phase I (12.5 kHz FDMA) common air interface be that digital baseline.¹⁵ This would also address the desire by some for an analog 12.5 kHz interoperable baseline, as Project 25 Phase I is “backward compatible” to 12.5 kHz analog. APCO emphasizes that adoption of the Project 25 Phase I (12.5 kHz FDMA) common air interface does not require adoption of other elements of the Project 25 standards.

APCO disagrees with Ericsson’s proposal that digital modulation and encryption should not be allowed in the new band.¹⁶ The PSWAC Final Report cites numerous instances where message security is a critical interoperability operational requirement. For example, “task force interoperability” (one of three types of interoperability described by PSWAC) is used for multi-agency narcotics enforcement where message security is essential. Encryption is easily implemented on systems using digital modulation, and digital modulation is the only modulation that supports Type I encryption (the most secure) required by many federal agencies.

APCO also disagrees with recommendations that the Commission mandate 6.25 kHz channels or equivalent efficiency for voice communications at this time. There is currently no land mobile radio equipment manufactured for the 800 MHz bands which can meet the necessary frequency stability, modulation characteristics, and overall performance for an FDMA use at 6.25 kHz. While 6.25 kHz spacing would accommodate a 12.5 kHz, 2 slot TDMA product, TDMA is not a viable option for smaller radio systems, which constitute the majority of public safety radio systems. Therefore, the Commission should

¹⁵ Comments of NPSTC at 28-29; Comments of State of California at ¶21; Comments of New York State Police at 5-6; Comments of State of Florida at 4-5.

¹⁶ Comments of Ericsson at 3.

adopt 12.5 kHz channel requirement, which will accommodate both TDMA and FDMA, at least until 6.25 kHz FDMA digital equipment is readily available and proven to meet public safety requirements.

The State of Florida recommends that channels be distributed in a manner which permits 250 kHz duplexer channel spacings for 12.5 kHz channel widths (and 25 kHz aggregated channels), and 450 kHz duplexer spacings for 150 kHz wide channels.¹⁷ APCO recommends that the Commission recognize the economic importance that this proposal represents, both in dollar cost and in tower impacts. Having to install multiple antenna systems on a tower in order to achieve system performance significantly impacts tower construction and siting issues. APCO notes that the proposed NPSTC bandplan (NPSTC Comments, Appendix A) provides the separations recommended by the State of Florida.

APCO also urges the Commission to establish receiver standards for public safety. While many manufacturers do not desire such standard, APCO, as a frequency coordinator, points out that receiver performance must be known to properly assess interference impacts. The most significant factor in the comparison of portable, mobile and base station radio equipment is the receiver performance specifications. As the State of Florida explains,¹⁸ selection of receiver specifications should not be left to the discretion of end users, as the vast majority of users are small agencies that lack the knowledge to determine whether a specific receiver performance satisfies their needs. Notably, widely used propagation models such as TIA TR 8.8 require information regarding receiver

¹⁷ Comments of State of Florida at 2 and 5.

¹⁸ Id. at 2-3.

characteristics to produce accurate results. Therefore, APCO urges that receiver standards are necessary and important.

Finally, while APCO generally supports the Comments of the State of California, it does not agree with California's suggestion that none of the new spectrum be designated for "image/high speed data or for video."¹⁹ APCO supports the channel plan proposed by NPSTC which allots some channels for that purpose, based on its belief that high speed data transfers will be an increasingly important aspect of public safety communications.

IV. Eligibility

NTIA and FLEWUG raise important issues regarding the extent to which federal entities should be allowed to use and/or obtain licenses for the 746-806 MHz spectrum. APCO agrees that it would appropriate and indeed desirable for federal public safety agencies to be authorized users (but not licensees) of interoperability spectrum pursuant to national and regional plans. Obviously, some emergency response activities require interoperability between federal and non-federal public safety entities, and frequency plans need to accommodate such interoperability. For this reason, APCO has long supported improved interoperability with federal agencies, and has worked closely with federal agencies in Project 25, PSWAC, and other activities.

APCO does not believe that federal entities can or should be "licensees" in the 746-806 MHz band. Congress required that the 24 MHz be allocated for "public safety services," which it clearly defined as certain services provided by "state or local

¹⁹ Comments of State of California at ¶ 41.

government” (or non-government entities under limited circumstances). Congress was well aware of the distinction between federal and non-federal spectrum use, and would have included “federal government” in its definition of public safety services if it had intended for 746-806 MHz licenses to be held by the federal government. Certainly, federal entities must be able to access and use interoperability channels in the band, but licenses for and management of the spectrum must be the primary responsibility of state and local governments. NTIA and FLEWUG appear to believe that, without licenses, they will not have adequate assurances of ongoing access to interoperability spectrum. Perhaps that can be addressed through Commission requirements that national and regional plans for interoperability channels include provisions for federal use.

APCO agrees with the Commission that federal agencies should not be allowed to hold licenses for general use public safety frequencies, though the Commission should permit (but not require) state and local government to include federal entities as end users of “shared” trunked radio systems. Consistent with existing law and good spectrum management policy, the licenses for such systems must remain in the hands of state and local government entities, not the federal government. APCO also notes that PSWAC never suggested that federal agencies need additional spectrum for internal operations, the principal purpose of general use spectrum.

The American Petroleum Institute, UTC, and others also suggest that certain “public service providers,” as defined by PSWAC, have access to interoperability spectrum in “life threatening situations” or other emergencies. APCO agrees, provided that such access is limited to emergency situations and is consistent with authorized

regional plans. Furthermore, such entities should be considered “guest” users and not as actual licensees.²⁰

In most instances, licenses for 746-806 MHz public safety spectrum should only be held by state and local government entities. The Budget Act does include non-government entities in its definition of “public safety services,” but only where the non-government entity has the protection of safety, life, health or property as its sole or principal purpose and where it is authorized by a state or local government to provide public safety services.²¹ As noted in APCO’s initial comments, this is most likely to include entities such as volunteer fire departments and disaster relief organizations. If the Commission grants an actual license to any such non-government entity, the license must be expressly limited for activities involving the protection of “safety, life, health or property,” and must be conditioned on the continued governmental authorization to the relevant entity to provide “public safety services.” At any time that such authorization ceases, the licenses must be returned. In addition, all non-government use must be approved and in compliance with relevant regional plans.²²

APCO reiterates its opposition to Compu-Dawn’s suggestion that it and similar commercial entities are “authorized to provide public safety services,” and therefore eligible for public safety licenses merely because they are under contract to provide

²⁰ APCO’s concurrence with federal and certain non-government use of interoperability spectrum assumes that no more than ten percent of the 24 MHz is allotted for interoperability.

²¹ See Section 337(f)(1) of the Communication Act, 47 U.S.C. § 337(f)(1), as added by the Balanced Budget Act of 1997, § 3004.

²² Currently, non-government entities are eligible for Emergency Medical Radio channels only if authorized by the relevant state EMS plan.

computer software or other communications products and services to public safety agencies.²³ First, Compu-Dawn does not meet subsection (A) of the statutory definition of “public safety services” because it does not have as its “sole or principal purpose” the protection of “safety, life, health or property.” APCO questions how any for-profit entity could meet that definition. Second, Compu-Dawn is not authorized to provide public safety services, rather it simply sells a product or service to a public safety service provider. To include entities such as Compu-Dawn in the definition of public safety services would open a floodgate of commercial enterprises that would quickly consume spectrum intended for direct public safety providers.

Finally as to eligibility issues, the Commission needs to recognize that a likely use of the 746-806 MHz public safety spectrum is for governmental wide area, trunked multi-agency systems. Such operations are inherently interoperable (e.g., allowing fire and police personnel to utilize a common radio system with internally designated interoperability channels) and are generally more efficient, both in terms of cost and spectrum utilization. To further maximize efficiency in such operations, government agencies that do not have direct emergency response obligations are also likely to be users. The licenses and responsibility for such systems will typically be in the hands of a state, county, city, or multi-jurisdictional authority, rather than a specific agency or department (i.e., police or fire). In any event, there should be no question that such multi-use systems qualify as “public safety services” and are eligible for 746-806 MHz licenses.

²³ Compu-Dawn made an identical argument in ET Docket 97-157, regarding the allocation of 24 MHz for public safety in the 746-806 MHz band. APCO’s reply comments, filed October 14, 1997, opposed Compu-Dawn’s position.

V. Broadcast/Public Safety Interference Protection

APCO supports the comments of Motorola and NPSTC regarding the broadcast/public safety land mobile interference protection criteria for the 746-806 MHz band. As Motorola explains in detail, a 40 dB D/U signal ratio at the Grade B contour, as proposed by the Commission, will be more than adequate to protect broadcasters, and can probably be reduced further. The Association for Maximum Service Television, Inc. and the National Association of Broadcasters predictably argue against the 40 dB D/U standard, despite the fact that it has been in place for some channels in the New York area, without any reports of harmful interference.

VI. Global Navigation Satellite System (GLONASS) Interference

The Federal Aviation Administration ("FAA") has recommended extremely stringent interference protection from the second harmonic of 799-802.5 MHz operations which fall in the 1598-1605 MHz range of GLONASS frequencies.²⁴ APCO agrees with the Reply Comments of NPSTC and Motorola which explain that the FAA's proposed levels are unnecessary and may be unattainable by land mobile radio equipment manufacturers. At minimum, the proposed levels would require public safety agencies to acquire much larger, heavier, and more expensive radio equipment.

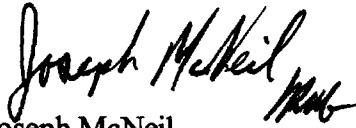
²⁴ Comments of Federal Aviation Administration.

CONCLUSION

The Commission should move forward to develop rules and policies for public safety use of the 746-806 MHz band, consistent with that set forth above and in APCO's initial comments.

Respectfully submitted,

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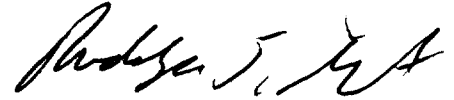
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Certificate of Service

I, Rudolph J. Geist, hereby certify that the foregoing "Reply Comments" were served this the 26th day of January, 1998, via first-class mail, postage prepaid, to the individuals listed below at the following addresses:



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